BROMODICHLOROMETHANE

CAS # 75-27-4

This fact sheet answers the most frequently asked health questions (FAQs) about bromodichloromethane. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Most bromodichloromethane is formed as a by-product when chlorine is added to water-supply systems. Bromodichloromethane is not known to cause adverse health effects in people, but animal studies show that high concentrations can damage the liver and kidneys and affect the brain. Bromodichloromethane has been found at 5 of the 1,518 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is bromodichloromethane?

(Pronounced brō′mō dī-klôr′ō měth′ān′)

Bromodichloromethane is a colorless, nonflammable liquid. Small amounts are formed naturally by algae in the oceans. Some of it will dissolve in water, but it readily evaporates into air.

Only small quantities of bromodichloromethane are produced in the United States. The small quantities that are produced are used in laboratories or to make other chemicals. However, most bromodichloromethane is formed as a by-product when chlorine is added to drinking water to kill bacteria.

What happens to bromodichloromethane when it enters the environment?

- Bromodichloromethane released to air is slowly broken down by reactions with other chemicals and sunlight or it can be removed by rain.
- In water, it will evaporate to the air and/or be broken down slowly by bacteria.
- When released to soil, most will evaporate to the air but some of it will be broken down by bacteria.
- Some bromodichloromethane may filter into the groundwater.
- Bromodichloromethane does not build up in the food chain.

How might I be exposed to bromodichloromethane?

- The most likely way people are exposed to bromodichloromethane is by drinking chlorinated water.
- You may breathe vapors released from chlorinated water in a swimming pool or in the home (cooking, washing dishes, bathing, etc.).
- Some bromodichloromethane may enter your body directly through your skin when bathing or swimming.
- People who live near a waste site containing bromodichloromethane could be exposed by drinking contaminated groundwater or breathing vapors released to the air.
- People who work at or live near a laboratory or factory that makes or uses this chemical could be exposed by breathing bromodichloromethane in the air.

ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html

How can bromodichloromethane affect my health?

No studies are available regarding health effects in people exposed to bromodichloromethane.

Animal studies indicate that the liver, kidney, and central nervous system are affected by exposure to bromodichloromethane. The effects of high doses on the central nervous system include sleepiness and incoordination. Longer exposure to lower doses causes damage to the liver and kidneys. There is some evidence from animal studies that bromodichloromethane may cause birth defects at doses high enough to make the mother sick. It is not known if lower doses would cause birth defects.

How likely is bromodichloromethane to cause cancer?

There is evidence that eating or drinking bromodichloromethane causes liver, kidney, and intestinal cancer in rats and mice. The Department of Health and Human Services (DHHS) has determined that bromodichloromethane is reasonably anticipated to be a human carcinogen.

Is there a medical test to show whether I've been exposed to bromodichloromethane?

Methods are available to measure low levels of bromodichloromethane in human blood, breath, urine, and fat, but not enough information is available to use such tests to predict if any health effects might occur. Because special equipment is needed, these tests are not usually done in the doctor's office.

Has the federal government made recommendations to protect human health?

The EPA has set a Maximum Contaminant Level (MCL) of 0.1 parts per million (ppm) for the combination of bromodichloromethane and a group of similar compounds (called trihalomethanes) that occur in chlorinated water. The EPA recommends that levels of halomethanes in lakes and streams should be limited to 0.19 ppm to prevent possible health effects from drinking water or eating fish contaminated with this group of chemicals.

Any release to the environment greater than 5,000 pounds of bromodichloromethane must be reported to the EPA.

The federal recommendations have been updated as of July 1999.

Glossary

Carcinogen: A substance that can cause cancer.
CAS: Chemical Abstracts Service.
Evaporate: To change into a vapor or a gas.
National Priorities List: A list of the nation's worst hazardous waste sites.
ppm: Parts per million.

Source of Information

Agency for Toxic Substances and Disease Registry (ATSDR). 1989. Toxicological profile for bromodichloromethane. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Animal testing is sometimes necessary to find out how toxic substances might harm people and how to treat people who have been exposed. Laws today protect the welfare of research animals and scientists must follow strict guidelines.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-639-6359. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.